Amendments to Claims

1. (Currently amended) A ~~conduit~~ nozzle used in a printer for ejecting ink having its surface or a portion of its surface coated with a durable fluid-repellent layer such that nozzle function cannot be hindered wherein said layer comprises, or is produced from, a substantially aqueous emulsion; said emulsion comprises or is produced from (1) a fluorocarbon silane or its hydrolyzate, (2) water, and (3) a surfactant, a silicon compound, and a catalyst which is an acid or base, or combinations of two or more thereof; said fluorocarbon silane has the formula $R_f-(CH_2)_p-Si\{-(O-CH_2CH_2)_n-OR^1\}_3$; said silicon compound is a silicate or an organoalkoxysilane; R_f is a C_{3-18} perfluoroalkyl group or combinations of two or more thereof; each R^1 is independently one or more C_{1-3} alkyl groups; p is 2 to 4; and n is 2 to 10.

The invention illustrates that a decline of a nozzle function can be avoided by applying a durable fluid-repellent layer to the nozzles so that the nozzle function cannot be hindered by the materials adhered.

2. (Canceled)

3. (Currently amended) A ~~conduit~~ nozzle according to claim 1 wherein said layer has a thickness of from about 0.1 nm to about 10,000 nm.

4. (Currently amended) A ~~conduit~~ nozzle according to claim ~~2~~ 3 wherein said layer has a thickness of from about 1 nm to about 1000 nm.

5. (Canceled)

6. (Canceled)

7. (Currently amended) A ~~conduit~~ nozzle according to claim 3 wherein said fluorocarbon silane is perfluoro alkyl ethyl tris(2-(2-methoxyethoxy)ethoxy)silane, perfluoro alkyl ethyl tris(2-(2-(2-methoxyethoxy)ethoxy)ethoxy) silane, or combinations thereof.

8. (Currently amended) A ~~conduit~~ nozzle according to claim 3 wherein said silicon compound is a silicate or organoalkoxysilane, said silicate has the formula of $Si-(R)_4$, each R is independently OCH_3, OCH_2CH_3, $(OCH_2CH_2)_mOCH_3$, m=1-10, or combinations of two or more thereof; said organoalkoxysilane has the formula of $R^2_qSi(OR^3)_{4-q}$, each R^2 is independently an alkyl group containing about 1 to about 10 carbon atoms; each R^3 is independently an alkyl group containing 1 to about 3 carbon atoms; and q = 1-3.

9. (Currently amended) A ~~conduit~~ nozzle according to claim 8 wherein said fluorocarbon silane is perfluoro alkyl ethyl tris(2-(2-methoxyethoxy)ethoxy)silane, perfluoro alkyl ethyl tris(2-(2-(2-methoxyethoxy)ethoxy)ethoxy) silane, or combinations thereof.

10. (Currently amended) A ~~conduit~~ nozzle according to claim 9 wherein said silicon compound is tetrakis(2-(2-methoxyethoxy)ethoxy)silicate, dimethyldimethoxysilane, methyltrimethoxy silane, methyltriethoxysilane, 3-aminopropyltriethoxy silane, N-(2-aminoethyl)3-aminopropyldiethoxy silane, 3-glycidoxypropyltrimethoxy silane, one or more partial condensation products thereof, or combinations of two or more thereof.

11. (Currently amended) A ~~conduit~~ nozzle according to claim 10 wherein said surfactant is R_f^1-CH_2CH_2-O-$(CH_2CH_2O)_{11}$-H, C_9H_{19}-C_6H_4-O-$(CH_2CH_2O)_{50}$-H, R_f^1-$CH_2CH_2SCH_2CH(OH)CH_2N(CH_3)_3^+Cl^-$, $C_{12}H_{25}(OCH_2CH_2)_4OSO_3^-NH_4^+$, $C_{12}H_{27}$-C_6H_4-$SO_3^-Na^+$, or combinations or two or more thereof wherein R_f^1 is a C_{3-18} perfluoroalkyl group.

12. (Currently amended) A ~~conduit~~ nozzle according to claim 4 wherein said fluorocarbon silane is perfluoro alkyl ethyl tris(2-(2-methoxyethoxy)ethoxy)silane, perfluoro alkyl ethyl tris(2-(2-(2-methoxyethoxy)ethoxy)ethoxy) silane, or combinations thereof.

13. (Currently amended) A ~~conduit~~ nozzle according to claim 4 wherein said silicon compound is a silicate or organoalkoxysilane, said silicate has the formula of $Si\text{-}(R)_4$, each R is independently OCH_3, OCH_2CH_3, $(OCH_2CH_2)_mOCH_3$, m=1-10, or combinations of two or more thereof; said organoalkoxysilane has the formula of $R^2_qSi(OR^3)_{4-q}$, each R^2 is independently an alkyl group containing about 1 to about 10 carbon atoms; each R^3 is independently an alkyl group containing 1 to about 3 carbon atoms; and q = 1-3.

14. (Currently amended) A ~~conduit~~ nozzle according to claim 13 wherein said fluorocarbon silane is perfluoro alkyl ethyl tris(2-(2-methoxyethoxy)ethoxy)silane, perfluoro alkyl ethyl tris(2-(2-(2-methoxyethoxy)ethoxy)ethoxy) silane, or combinations thereof.

15. (Currently amended) A ~~conduit~~ nozzle according to claim 14 wherein said silicon compound is tetrakis(2-(2-methoxyethoxy)ethoxy)silicate, dimethyldimethoxysilane, methyltrimethoxy silane, methyltriethoxysilane, 3-aminopropyltriethoxy silane, N-(2-aminoethyl)3-aminopropyldiethoxy silane, 3-glycidoxypropyltrimethoxy silane, one or more partial condensation products thereof, or combinations of two or more thereof.

16. (Currently amended) A ~~conduit~~ nozzle according to claim 15 wherein said surfactant is R_f^1-CH_2CH_2-O-$(CH_2CH_2O)_{11}$-H, C_9H_{19}-C_6H_4-O-$(CH_2CH_2O)_{50}$-H, R_f^1-$CH_2CH_2SCH_2CH(OH)CH_2N(CH_3)_3^+Cl^-$, $C_{12}H_{25}(OCH_2CH_2)_4OSO_3^-NH_4^+$, $C_{12}H_{27}$-C_6H_4-$SO_3^-Na^+$, or combinations or two or more thereof wherein R_f^1 is a C_{3-18} perfluoroalkyl group.

17. (Currently amended) A ~~conduit~~ nozzle according to claim 16 wherein said ~~conduit~~ nozzle is a ceramic, polyimide, or metal, or is produced from a ceramic, polyimide, or metal.

18. (Canceled)

19-29. (Canceled)